

Original Research Article

PERCEPTION AND ATTITUDE REGARDING COVID-19 INFECTION AMONG DENTAL STUDENTS

Dr. Ayushi Sharma¹, Dr. Sahana. S², Dr. Garima Bhamhani³, Dr. Anuja Pathak⁴, Anupam Sharma⁵

¹Post Graduate Department Of Public Health Dentistry, People's College Of Dental Science And Research Centre

² Professor and Head, Department of Public Health Dentistry, People's College Of Dental Science And Research Centre

³ Reader, Department of Public Health Dentistry, People's College Of Dental Science And Research Centre

⁴ Senior Lecturer, Department of Public Health Dentistry, People's College Of Dental Science And Research Centre

⁵ Assistant Professor, Department of Institute of Business Management, GLA University, Mathura

Correspondence: Dr. Ayushi Sharma, ayushi8888sharma@gmail.com

Abstract:

COVID 19 or corona virus is a RNA virus and firstly it was discovered in WUHAN, CHINA on 31st December 2019. SARS COV-2 is responsible for COVID 19 occurrence. A suggested route of human-to-human transmission is through airborne droplets, touching or coming into contact with an infected person or a contaminated surface. A large number of medical staff were reported to have acquired the disease while working with infected individuals. The dental clinic is not an exception for a similar possibility of transmitting and acquiring the infection between staff or individuals; moreover, the dental clinic could be a riskier environment for spreading the virus because of the close contact with patients and the nature of the dental treatment. So the aim of the study was to evaluate the perception and attitude regarding covid-19 infection among dental students.

Methods: Post graduate students and interns of a dental college in Central India were selected. 184 individuals in total were chosen, with 80 postgraduates overall and around 104 interns. Data was collected using an online questionnaire employing Google Forms. The questionnaires were distributed using social media platform like facebook, WhatsApp etc. Chi square test was used to evaluate perception and attitude regarding covid-19 infection among post graduates and interns and the data obtained were subjected to statistical analysis using Statistical Package for the Social Sciences (SPSS Version 23; Chicago Inc., IL, USA).

Results: This study found that dental students are well-aware of effects of expected SARS-CoV-2 infection transmission in a clinical setting. It also came to the conclusion that postgraduates have a somewhat more positive attitude regarding the illness than interns do.

Conclusion: The dentist and dental students must be aware of the effects of expected SARS-CoV-2 infection transmission in a clinical setting. They must therefore stay up to date on any updated information regarding this ailment which help them and their patients to be safe while treatment.

Key-words: COVID-19, Dentist, Perception, Students

Received date: 10/10/2022
Accepted date: 14/10/2022
Published date: 20/10/2022

1. Introduction

One of the common condition to coronavirus is ordinary cold that may result in life-threatening sickness. The Middle East respiratory disease (MERS) and severe acute respiratory syndrome (SARS) have recently appeared, causing substantial mortality. The symptoms which are commonly seen in coronavirus disease are dry cough, fever, shortness of breath, and exhaustion. If the environmental condition is favourable then the coronavirus might last anywhere from a few hours to many days on surfaces. The coronavirus disease (COVID-19) is a newly discovered viral infection that started in Wuhan, China and caused the outbreak of pneumonia in the rest of the world. A suggested route of human-to-human transmission is through airborne droplets, touching or coming into contact with an infected person or a contaminated surface. A large number of medical staff were reported to have acquired the disease while working with infected individuals. The dental clinic is not an exception for a similar possibility of transmitting and acquiring the infection between staff or individuals; moreover, the dental clinic could be a riskier environment for spreading the virus because of the close contact with patients and the nature of the dental treatment. Although patients diagnosed with COVID-19 are not supposed to receive dental treatments, dental emergencies can occur, and close contact would be unavoidable. There are practical guidelines recommended for dentists and dental staff by the Centers for Disease Control and Prevention (CDC), the American Dental Association (ADA), and the World Health Organization to control the spread of COVID-19. Like with other contagious infections, these recommendations include personal protective equipment, hand washing, detailed patient evaluation, rubber dam isolation, anti retraction handpiece, mouth rinsing before dental procedures, and disinfection of the clinic. In addition, some guidelines and reports have provided useful information about the signs and symptoms of the disease, ways of transmission, and referral mechanisms to increase dentists' knowledge and prevention practices, so they could contribute, at a population level, in disease control and prevention. It is important to implement sound prevention measures in dental clinics and to increase the level of awareness among dentists to improve their prevention.¹

Dental professionals have always been taught on protecting themselves and their patients from potential pathogens. However, the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection, better known as coronavirus disease (COVID-19), has brought a new, unanticipated challenge to dental professionals. The truth of the matter is that standard personal protective equipment (PPE) is not enough in cases of airborne infections such as COVID-19. The next level of infection control "transmitted-base precaution" should be taken into action by upgrading the PPE with materials such as unique masks (e.g., N-95), face protection or shield, gown, or coverall, head cover, and rubber boots.²

cavities and respiratory tracts. Regarding the specificity of dental procedures, which involve close proximity and face-to-face contact, and the utilization of prolonged aerosol-generating procedures (AGPs), dentists' risk of COVID-19 contraction is one of the highest among all the medical professions. The potential routes for the spread of a respiratory syndrome in a dental office are direct contact with the body fluids of an infected patient, the touching of environmental surfaces and instruments contaminated with the body fluids of a COVID-positive person, and, potentially, contact with infectious particles that have become airborne. The most considerable adjustment required was the implementation of enhanced personal protective equipment (PPE) for AGPs, such as filtering face piece (FFP) respirators, disposable fluid-resistant gowns, airtight eye protection and full face shields. This was especially challenging due to the lack of their availability for purchase and the fact that their prices have skyrocketed. This pandemic has put an enormous pressure on both private dental practitioners and the already-struggling public oral health care system.³

2. Rationale for study

Dental offices are among the highest risk for transmission of the COVID-19, having the potential to transmit the virus via routine dental procedures. This study was assessed the preparedness and perception of infection control measures against the COVID-19 pandemic by dental students.

3. Research Questions

This study will aim to answers the following questions.

- a. What is the perception of dental students towards COVID19 and infection control undertaking for curbing COVID 19?
- b. Is the attitude of dental students towards COVID 19 and Infection Control adequate?
- c. Does dental student have adequate infection control awareness regarding COVID 19?

4. Methods:

Study Population- study population consist of post graduate students and interns of a dental college, Central India. The study was done for a period of 6 months and the data was collected using an online questionnaire employing Google Forms. The questionnaires were distributed using social media platform like Facebook, WhatsApp etc. The questionnaires were anonymous to maintain the privacy and confidentiality of all information collected in the study. Ethical approval was obtained from the Institutional Review Board for conducting the study.

Eligibility criteria:

Inclusion criteria- Interns and Post Graduate students who cooperated for the study irrespective of age and gender.

Exclusion criteria- Interns and Post Graduate who did not consent for the study.

Study Instrument: An online questionnaire was used to collect the data. The questionnaire was in English language, and contain a series of questions divided into sections. It had a multiple choice questions including demographic detail and questions to check awareness about incubation period, symptoms, mode of transmission and sterilization, and precautions, of the coronavirus disease infection.

Using Statistical Package for the Social Sciences (SPSS Version 23; Chicago Inc., IL, USA). Data comparison was done by applying specific statistical tests to find out the statistical significance of the comparisons.

Variables were compared using mean values, numbers, percentages and standard deviation. Chi square test was used to evaluate perception and attitude regarding covid-19 infection among post graduates and interns. ANOVA test was used and P value lesser than 0.05 was considered to be statistically significant.

5. Results

The current study assessed Perceptions and attitude regarding COVID 19 amongst 184 dental students. (Table1).

On questioning for the Incubation period of COVID 19 virus in Q1 of Table 1 it was seen that the majority of the participant i.e. 128 (69.6%) out of 184 found that the incubation period of COVID 19 infection was within 1-14 days. It was seen that the PERCEPTION AND ATTITUDE of both the interns and post graduates were in the same level with p value remaining non-significant at $p= 0.199$.

When students were asked for the symptoms manifested of COVID 19 in Q2 of Table 1

infection 100% of the respondents answered Fever, dry cough and tiredness, suggesting an appropriate awareness among the students towards COVID 19.

On evaluating the mode of transmission of COVID 19 infection 19 in Q3 of Table 1 majority of the students signified hand shaking as the commonest mode of transmission of COVID-19 infection which was equally distributed among both postgraduates and interns which was significant at $p=.01^*$

Mode of Sterilization of Instruments used in COVID 19 Patients: On evaluating the mode of sterilization of instruments used in COVID 19 patients 19 in Q4 of Table 1 majority of the students signified the use of autoclave, dry-heat oven, or chemical vapour for sterilizing reusable tools like mouth mirrors, probes, dental scalers with a statistically significant value at $p<0.001^*$

Extra Precautions One Can Take to Protect Them Self From COVID 19: When students were asked for what extra precautions one can take to protect them self from COVID 19 infection 19 in Q5 of Table1, 100% response was obtained for disinfect your hands and surfaces regularly and dispose gloves before entering the practice suggesting good perception and attitude among the students towards COVID 19.

Best Sanitizer for COVID 19 Protection: On evaluating the questionnaire for the "PERCEPTION AND ATTITUDE REGARDING COVID-19 INFECTION AMONG DENTAL STUDENTS" to know about the best sanitizer of COVID 19 protection in Q6 of Table1 it was seen that 100% response was obtained for alcohol based sanitizer suggesting good perception and attitude among the students towards COVID 19.

Should We Frequently Clean Hands by Using Alcohol-Based Hand Rub or Soap and Water: When students were asked for their view on cleaning hands frequently by using alcohol-based hand rub or soap and water in Q7 of Table1 we got a 100% response from post graduates and interns suggesting good perception and attitude among the students towards COVID 19.

When students were asked if we should routinely clean and disinfect surfaces comes in contact with known or suspected patients in Q8 of Table1 it was seen that 100% response was obtained from post graduates and interns suggesting a good perception and attitude among the students towards COVID 19.

In Q9 of Table1 Post graduates and intern students gave a 100% response on asking about the use of personal protective equipment such as dental goggles, masks, and gloves. this will show a good perception and attitude among the dental students towards COVID 19.

All the interns and post graduates gave a 100% response in Q10 of Table1 on asking about taking a shot of COVID 19 vaccine will be effective or not. It will show a good perception and attitude of post graduate and interns towards COVID 19.

In Q11 of Table1 Around 54.3%(100) interns and 43.5%(80) post graduates say that we should not move and transport patients out of their area unless necessary and around 4%(2.2) interns says that it is ok if we move patient during COVID.

Around 104(56.5%) post graduates and 76(41.3%) interns give a positive response on asking if it is necessary for all the health staff members to wear protective clothing in Q12 of Table1 or not while 4(2.2%) interns say that it is not necessary for the health staff members

to wear protective clothing. Which shows a good perspective of post garduates and inters towards COVID 19 with a statistically significant value at $p< 0.021^*$.

On asking post graduates and interns if we should place, known or suspected patients in adequately ventilated single rooms or not in Q13 of Table1 then 104(56.5%) post graduates and 72(39.1%) interns says yes and around 8(4.3%) interns says no on asking the same question. It shows a good perception and attitude of post graduates and interns towards COVID 19 with a statistically significant value at $p< 0.001^*(NS)$

6. Discussion:

This study assessed perception and attitude regarding covid-19 infection among dental students. The attitudes of postgraduate students and interns regarding the COVID 19 infection are examined to determine whether there are any differences between the two groups' attitudes and knowledge. 184 individuals in total were chosen, with 80 postgraduates overall and around 104 interns.

As per the study by Alnasser AHA et.al. Social media is very important in providing all the information required, especially in this situation with COVID 19. Social media is very important in this scenario as well. Given that COVID 19 spreads quickly and is a respiratory virus with an extensive host range, the impact of this virus is quite lethal. Because SARS-CoV-2 outbreaks have linked to greater rates of morbidity and mortality in hospitals, it's crucial for medical professionals to be well-informed about the virus (1).

It appears to be a virus that spreads quickly and is highly contagious, according to the study by Khader Y. et. al. As it is an airborne virus, human to human transmission may occur through contact with an infected person who is in close proximity to the uninfected person. It was seen that there have been numerous reports of medical professionals contracting the illness after working with affected people. The dental clinic could be a riskier setting for spreading the virus due to the close contact with patients and the nature of the dental treatment, and it is not an exception that there is a similar chance of transmission and acquisition of the infection among staff or persons. Therefore, in order to deal with the disease and be able to regulate and prevent its spread, dentists need maintain a high level of awareness and integrity. The American Dental Association (ADA), the World Health Organization (WHO), and the Centers for Disease Control and Prevention (CDC) have all issued practical recommendations for dentists and dental employees to stop the spread of COVID-19, personal protective equipment, hand washing, thorough patient assessment, rubber dam isolation, anti-retraction hand piece, mouth rinse prior to dental treatments, and clinic disinfection are among the recommendations (2).

The ability to control a disease requires understanding of that disease. This study found that dental students are well-aware of the COVID 19 infection. It also came to the conclusion that postgraduates have a somewhat more positive attitude regarding the illness than interns do. The possible limitations of the present study can be the subjective bias owing to the design of the study. Also, as this was circulated via the social media, the exact perception of the students is also questionable.

7. Conclusion:

The dentist and dental students must be aware of the effects of expected SARS-CoV-2 infection transmission in a clinical setting. They must therefore stay up to date on any updated information regarding this ailment which help them and their patients to be safe while treatment. In such pandemic situation medical and dental workers must maintain a harmony between giving proper treatment which is require for the patient and keeping themselves safe from the transmission of disease.

References

- ¹Alnasser AHA, Al-Tawfiq JA, Al-Kalif MSH, Shahadah RFB, Almuqati KSA, Al-Sulaiman BSA, et al. Public knowledge, attitudes, and practice towards COVID-19 pandemic in Saudi Arabia: A web-based cross-sectional survey. *Med Sci (Basel)*. 2021 Feb 16;9(1):11. doi: 10.3390/medsci9010011, PMID 33669208.
- ²Khader Y, Al Nsour M, Al-Batayneh OB, Saadeh R, Bashier H, Alfaqih M, et al. Dentists' awareness, perception, and attitude regarding COVID-19 and infection control: cross-sectional study among Jordanian dentists. *JMIR Public Health Surveill*. 2020 Apr 9;6(2):e18798. doi: 10.2196/18798, PMID 32250959.
- ³Tysiąc-Miśta M, Dziedzic A. The attitudes and professional approaches of dental practitioners during the COVID-19 outbreak in Poland: A cross-sectional survey. *Int J Environ Res Public Health*. 2020 Jun 30;17(13):4703. doi: 10.3390/ijerph17134703, PMID 32629915.
- ⁴Matsuda JK, Grinbaum RS, Davidowicz H. The assessment of infection control in dental practices in the municipality of São Paulo. *Braz J Infect Dis*. 2011 Jan-Feb;15(1):45-51, PMID 21412589.
- ⁵Backer Jantien A, Klinkenberg D, Jacco W. Incubation period of 2019 novel coronavirus (2019-nCoV) infections among travellers from Wuhan, China, 20-28 January 2020. *Euro Surveill*. 2020;25(5):pii=2000062. doi: 10.2807/1560-7917.ES.2020.25.5.2000062, PMID 32046819.
- ⁶Umeizudike KA, Isiekwe IG, Fadeju AD, Akinboboye BO, Aladenika ET. Nigerian undergraduate dental students' knowledge, perception, and attitude to COVID-19 and infection control practices. *J Dent Educ*. 2021;85(2):187-96. doi: 10.1002/jdd.12423, PMID 32959382.
- ⁷Batra K, Urrankar Y, Batra R, Gomes AF, S M, Kaurani P. Knowledge, protective behaviors and risk perception of COVID-19 among dental students in India: A cross-sectional analysis. *Healthcare (Basel)*. 2021;9(5):574. doi: 10.3390/healthcare9050574, PMID 34067943.
- ⁸Aragão MGB, Gomes FIF, Pinho Maia Paixão-de-Melo L, Corona SAM. Brazilian dental students and COVID-19: A survey on knowledge and perceptions. *Eur J Dent Educ*. 2022;26(1):93-105. doi: 10.1111/eje.12676, PMID 33547843.
- ⁹Cheng HC, Lu SL, Yen YC, Siewchaisakul P, Yen AM, Chen SL. Dental education changed by COVID-19: Student's perceptions and attitudes. *BMC Med Educ*. 2021;21(1):364. doi: 10.1186/s12909-021-02806-5, PMID 34217279.
- ¹⁰Bălan A, Bejan I, Bonciu S, Eni CE, Ruță S. Romanian medical students' attitude towards and perceived knowledge on COVID-19 vaccination. *Vaccines*. 2021;9(8):854. doi: 10.3390/vaccines9080854, PMID 34451979.

Table 1: Enumeration of the Variables Amongst Study Population

Variables	Interns N (%)	Post graduates N (%)	Total N(%)
Q1 What is the incubation period of COVID 19 virus?			
1-14 days	72(69.2%)	56(70%)	128(69.6%)
2. 1-11	4(3.8%)	0(0)	4(2.2)
3. 2-14	28 (26.9%)	24(30%)	52(28.3)
4. 1-19	0(0%)	0(0)	0(0)
Chi square statistic – 3.232; df = 2; p = 0.199 (NS)			

Variables	Interns N (%)	Post graduates N (%)	Total N(%)
Q2 What are the symptoms of the COVID-19 infection:			
Fever, dry cough, tiredness	104(100%)	80(100%)	184(100%)
2. Itching, hair loss, anaemia	0(0%)	0(0%)	0(0%)
3. obesity, polymenorrhea, oligomenorrhea	0(0%)	0(0%)	0(0%)
4. Insomnia, amnesia, hallucinations	0(0%)	0(0%)	0(0%)
Chi square statistic –not computed;			

Variables	Interns N (%)	Post graduates N (%)	Total N(%)
Q3 What are the mode of transmission of COVID-19 infection.			
1.Hand shaking	84(80.7)	64(80%)	148(80.4%)
2. Maintaining 1 meter distance while talking	8(7.6%)	0(0%)	8(4.3%)
3. Wearing mask while driving	12(11.5%)	16(20%)	28(15.2%)
4.None of the above	0(0)	0(0%)	0(0%)
Chi square statistic-- 8.285; ; df = 2; p= 0.01*			

Variables	Interns N (%)	Post graduates N (%)	Total N(%)
Q4 What are the mode of sterilization of instruments used in COVID 19 patients			
1.by sterilizing reusable tools like mouth mirrors, probes, dental scalers, using an autoclave, dry-heat oven, or chemical vapour	104(100%)	72(90%)	176(95.7%)
2.By boiling it for 15 minutes	0(0%)	0(0%)	0(0%)
3.Washing with soap containing antibiotic properties	0(0%)	8(10%)	8(4.3%)
4.By keeping it in direct sunlight for 20 minutes	0(0%)	0(0%)	0(0%)
<i>Chi square statistic-- ; 10.873, df= 1, p= <0.001*</i>			

Variables	Interns N (%)	Post graduates N (%)	Total N(%)
Q5 What extra precautions one can take to protect them self from COVID 19.			
1.Disinfect your hands and surfaces regularly and dispose gloves before entering the practice.	104(100%)	80(100%)	184(100%)
2.By closing the clinic for 8 hours	0(0%)	0(0%)	0(0%)
3.Use of AIR CONDITIONER at 18 degree Celsius	0(0%)	0(0%)	0(0%)
4.None of the above	0(0%)	0(0%)	0(0%)
Chi square statistic –not computed			

Variables	Interns N (%)	Post graduates N (%)	Total N(%)
Q6 Which sanitizer is best for COVID 19 protection.			
1.Alcohol based	104(100%)	80(100%)	184(100%)
2.Non-alcohol based	0(0%)	0(0%)	0(0%)
3.Herbal	0(0%)	0(0%)	0(0%)
4.None of the above	0(0%)	0(0%)	0(0%)
Chi square statistic –not computed;			

Variables	Interns N (%)	Post graduates N (%)	Total N(%)
Q7 Should we frequently clean hands by using alcohol-based hand rub or soap and water.			
Yes	104(100%)	80(100%)	184(100%)
No	0(0%)	0(0%)	0(0%)
Not applicable	0(0%)	0(0%)	0(0%)
Chi square statistic –not computed			

Variables	Interns N (%)	Post graduates N (%)	Total N(%)
Q8 Should we routinely clean and disinfect surfaces which comes in contact with known or suspected patients.			
Yes	104(100%)	80(100%)	184(100%)
No	0(0%)	0(0%)	0(0%)
Not applicable	0(0%)	0(0%)	0(0%)
Chi square statistic –not computed			

Variables	Interns N (%)	Post graduates N (%)	Total N(%)
Q9 Should we use personal protective equipment such as dental goggles, masks, and gloves.			
Yes	104(100%)	80(100%)	184(100%)
No	0(0%)	0(0%)	0(0%)
Not applicable	0(0%)	0(0%)	0(0%)
Chi square statistic –not computed			

Variables	Interns N (%)	Post graduates N (%)	Total N(%)
Q10 Do you think taking a shot of COVID 19 vaccine will be effective			
Yes	104(100%)	80(100%)	184(100%)
No	0(0%)	0(0%)	0(0%)
Not applicable	0(0%)	0(0%)	0(0%)
Chi square statistic –not computed			

Variables	Interns N (%)	Post graduates N (%)	Total N(%)
Q11 Should we avoid moving and transporting patients out of their area unless necessary.			
Yes	100(96.1%)	80(100%)	180(97.8%)
No	4(3.8%)	0(0%)	4(2.2%)
Not applicable	0(0%)	0(0%)	0(0%)
Chi square statistic- 3.145; df = 1; p = 0.076 (NS)			

Variables	Interns N (%)	Post graduates N (%)	Total N(%)
Q12 Is it necessary for all the health staff members to wear protective clothing.			
Yes	104(100%)	76(95%)	180(97.8%)
No	0(0)	4(5%)	4(2.2%)
Not applicable	0(0%)	0(0%)	0(0%)
Chi square statistic- 5.316; df = 1; p = 0.021*			

Variables	Interns N (%)	Post graduates N (%)	Total N(%)
Q13 Place, known or suspected patients in adequately ventilated single rooms.			
Yes	104(100%)	72(90%)	176(95.7%)
No	0(0)	8(10%)	8(4.3%)
Not applicable	0(0%)	0(0%)	0(0%)
Chi square statistic- 10.873; df = 1; p < 0.001*(NS)			
TOTAL	104	80	184

*=Significant; NS = Not Significant

Table 2: Demographic Details

GENDER		
MALE	FEMALE	TOTAL
28(15.3%)	156(84.7%)	184(100%)

REGION					
NORTH	SOUTH	EAST	WEST	CENTRAL	TOTAL
52(28.2%)	12(6.5%)	4(2.1%)	0(0)	116(63%)	184(100%)